

**What's This all About?**

The purpose of this overview is to give a brief synopsis of what led up to the development of TransView (will be defined later), how it solved the “videotape” problem (discussed below) and the opportunity products like this one provide for local agencies to have their own, versatile yet inexpensive imaging system.

No, we are not going back to the beginning of time and recite the history of the Washington State Department of Transportation (WSDOT). However some background is necessary.

**But We've Always Done it This Way...**

Videotaping the state's 7,000 mile highway system that is.

Until recently, the Department of Transportation's Data Office not only videotaped the state's highways once every two years, but also made tons of copies for all the regions, the twenty-some-odd maintenance areas, the Attorney General's Office as well as anybody else even remotely interested in “highway movies.”

Needless to say, all that activity created massive tape storage problems, consumed literally hundreds of videotapes.

Even though the Transportation Data Office was churning out videotapes for everybody under the sun, amazingly enough not everybody in the department had ready access of the tapes to review basic roadside information such as the placement of guardrail, signs, or all the other stuff that makes up roadway geometrics.

Even more frustrating was the inability to easily share videotape information between geographically separated offices. The interested parties would have to meet somewhere, fire up the VCR, jointly review the section of roadway in question, make decisions or draw conclusions based on what they saw, hop back in their cars and go home. The only way to short circuit this time consuming process was to, heaven forbid, create more videotapes. Since the Transportation Data Office was already up to their eyeballs in videotapes this was not considered a very good solution..

What was needed was a solution that eliminated the exclusive reliance on videotape and allow geographically separated staff to view the same set of images at the same time without leaving their offices.

Oh yes, the solution also had to be extremely versatile and cost effective.

So what exactly is TransView? TransView stands for State Route view. TransView is basically application software that was developed in-house, by the Transportation Data Office, to collect and store roadway images. These images, once collected, become part of a database that can be instantly accessed by anyone with a computer.

The image database may reside on a Local Area Network (LAN) server or on CD discs that can be used by any windows based computer. Consequently, the need for all those videotapes is disappearing. Physically separated offices can now share images over the computer. Gone are the mountains of videotapes and the accompanying frustration of getting everybody together to view them.

How does SR View work?

Well, the Transportation Data Office still video And as before, a Distance Measuring Instrument information on the videotape every 52.8 feet (1 nothing more than a fancy odometer, the Trans the camera sees at the precise moment that the SR View software compresses that image, gives drive of the on-board computer, clears its memory 52.8 feet down the road. Traveling at roughly 4 and process an image every 0.9 seconds.

When everything is said and done this process produces a bunch of image files that reside on the hard drive. The images on the hard drive are a sequential visual record of the road just videotaped at 52.8-foot intervals just like the sample shown below.



If the images are transferred to a LAN, everybody connected to it can access them and “travel” down the road in 52.8 foot jumps in either direction. The images can also be copied onto a CD disc (each disc can hold roughly 50,000 images) and played back on any windows based computer.

## What’s in it for Local Agencies?

So it finally comes down to this. What’s in it for me? Well the short answer is plenty. The capability of accessing roadway images on the computer was recognized by the TransAid Service Center as something that would be of great interest to local agencies.

Numerous presentations to various local agency groups confirmed that this was indeed the case. It appeared that we had struck gold and had a winner on our hands. Local agencies were quick to identify additional uses for TransView such as:

- Standard Road/street video logging
- Project management
- Image based 911 database
- Vegetation management

- Sign inventory
- Risk management
- Visual record of evacuation routes
- Visual record of bus routes



**This software can also be modified to provide a visual record of project that can be archived and accessed years later.**

How can local agencies take advantage of TransView type technology, given that they have very tight budgets? The answer is very easily, since the TransView software was developed by WSDOT in-house, it is free for the asking. It just doesn't get any cheaper than that. It was written in Visual Basic (VB4) and can be customized to fit your local agency needs.

In addition, an entire section of this manual is devoted to documenting the software to ensure that your applications run smoothly and trouble free. Now that the software side is taken care off, addressing the hardware side is a little trickier. After all, what good is image-capturing software if you don't have the camera and computer equipment to take and process the pictures in the first place? Excellent question, a vehicle, camera, computer, and associated hardware peripherals are absolutely essential to making the system work. Acquiring the hardware and instructions for outfitting your own video van will be discussed at great length in the next section of this manual. So please read on.

### Where do we go From Here?

The remainder of this manual is devoted to assist local agencies in bringing their roadway imaging applications to fruition. To accomplish this task, the manual is divided into two broad areas:

1. Building and outfitting a video van and...
2. Software issues and documentation.

It should also be noted that this is, and in all possibility will continue to be, a work in progress. New imaging applications, technology changes and unique ways of doing things will make updates to this manual an ongoing endeavor.

## Introduction

### **Caveats...Caveats...Caveats**

This section of the manual addresses the hardware issues in building and equipping a video van.

During the course of the discussion numerous pieces of equipment will be identified by make and model number. Please note that the mentioning of brand names as well as the identification of specific pieces of equipment by make and model numbers should not be construed as endorsing these products. It simply means that they were chosen by the Washington State Department of Transportation (WSDOT) because they were either the lowest bidder or on contract. Since the department's video van will serve as the working model throughout this discussion, it seems only reasonable to be very specific regarding the components that make up that system. The same rationale applies to any vendors mentioned in this document that have either sold a product or rendered a service. So much for treading water.

## Component Philosophy

A component philosophy...Come on now!

It was decided early on that all computer hardware needed to make the SR View system run should be standard, off the shelf, components. In other words, the type of stuff you can readily buy from Future Shop, Circuit City, or the computer nerd that lives down the street. It would be helpful as you build your unique system to adopt the same philosophy.

The genius of this approach is that an equipment supplier who is busily competing against 50 peers that make and sell the same gizmo cannot hold you hostage. That by itself should be reason enough to buy only standard components, but there is more.

Competition translates into ongoing R&D, innovation, equipment compatibility, and of course, competitive pricing.

In addition, the competitive environment provides us with yet another advantage; it forces computer makers to continue to develop better and faster machines that can manage, process and store ever increasing amounts of data. This means that hardware will be able to store more images of greater than present quality and access them faster. In effect, general advances in the computer industry will determine the long-term hardware configuration that supports your imaging system.

## Equipment Costs

Purchasing agents, Accountants and similar folks thrive on things like cost-benefit-analysis, life cycle costing, budgeting and the sheer joy of "running the numbers." So don't be surprised when they ask you for equipment cost estimates not once but numerous times.

The following chart provides equipment cost estimates as of November 1997. Please keep in mind that these estimates do not include installation labor.

### **Basic System Costs**

Video Camera	\$4,500
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VCR Deck	\$1,500
DMI and Misc.	\$3,000
Converter	\$1,000
Computer	<u>\$5,000</u>

Total \$15,000

### Thoughts on Offsetting the Cost of Your Own Video Van

The advantages of having your own video van are obvious. The biggest advantage of course is that the vehicle is always under the control of your county or city.

Your public works department, risk management office, assessor's office, sheriff, or police department will probably share in its acquisition, operational expenses and use. In all likelihood, your agency already possesses a van that can be modified to serve as a video van.

Doing video and imaging work for other local agencies in your area may further offset the expense of equipping and operating the vehicle. Such opportunities should be explored and exploited whenever possible.

It stands to reason that not every county or city in the state will wind up with their own video van. There may be ample opportunity for your agency to contract with other local agencies and in effect recover some of the cost associated with putting your video van on the road.

### Wagons Ho!...

In a manner of speaking you are all pioneers. You are blazing a trail through unfamiliar territory. After all, how many video vans have you built before this one? During this journey situations will arise that were totally unanticipated; some will prove frustrating while others will point to a better way of doing things. Be sure to document the tribulations as well as the triumphs and successes you encounter in great detail. The information you provide will be invaluable to future "Van Builders" and will be reflected in future updates of this manual.